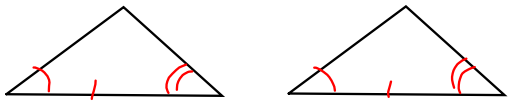
4-4 Prove TrianglesCongruent by SAS and HL
4-5 ASA and AAS

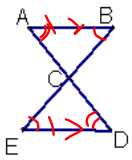
SSS
SAS
ASA
AAS
HL

Theorem 4.5 HL (Hypotenuse-Leg)-If the hypotenuse and a leg of oneright Δ are $\cong$ to the hypotenuse and one leg of anotherright Δ, then the Δs are $\cong$.

Postulate 21 ASA-If 2 angles and the included side of one Δ are $\cong$ to 2 angles and the included side of another triangle, then the triangles are $\cong$.



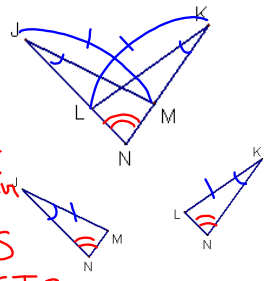
Given: $\overline{AB} \parallel \overline{ED}$; $\overline{AB} \cong \overline{ED}$
Prove: $\Delta ABC \cong \Delta DEC$



S.	R.
① $\overline{AB} \parallel \overline{ED}$, $\overline{AB} \cong \overline{ED}$	① Given
② $\angle E \cong \angle B$, $\angle D \cong \angle A$	② Alt Int $\angle$s Thm
③ $\Delta ABC \cong \Delta DEC$	③ ASA

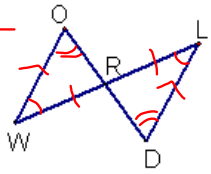
Theorem 4.6 AAS-If 2 angles and a non-included side ofone Δ are $\cong$ to 2 angles and a non-included side of another Δ, then the Δs are $\cong$.

Given: ~~∠K ≅ ∠J~~; $\overline{KL} \cong \overline{JM}$
Prove: $\overline{LN} \cong \overline{MN}$



① ~	① Given
② ∠N ≅ ∠N	② Reflexive
③ △JNM ≅ △KNL	③ AAS
④ $\overline{LN} \cong \overline{MN}$	④ CPCTC

Given: $\overline{WO} \parallel \overline{LD}$; R is the midpoint of $\overline{WL}$
Prove: OR ≅ DR

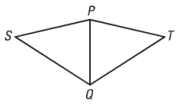


① ~	① Given
② $\overline{WR} \cong \overline{RL}$	② def of midpt
③ ∠W ≅ ∠L ∠O ≅ ∠D	③ Alt int ∠s thm
④ △WOR ≅ △LDR	④ AAS
⑤ $\overline{OR} \cong \overline{DR}$	⑤ CPCTC

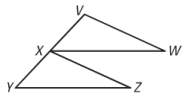
HW
p245-246 #s 35-37
p252-255 #s 3-5, 7, 33, 34

PROOF In Exercises 35 and 36, write a proof.

35. **GIVEN** ▶ $\overline{PQ}$ bisects ∠SPT, $\overline{SP} \cong \overline{TP}$
PROVE ▶ △SPQ ≅ △TPQ

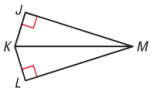


36. **GIVEN** ▶ $\overline{VX} \cong \overline{XY}$, $\overline{XW} \cong \overline{YZ}$, $\overline{XW} \parallel \overline{YZ}$
PROVE ▶ △VXW ≅ △XYZ



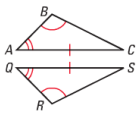
PROOF In Exercises 37 and 38, write a proof.

37. **GIVEN** ▶ $\overline{JM} \cong \overline{LM}$
PROVE ▶ △JKM ≅ △LKM

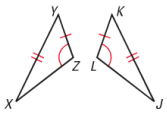


IDENTIFY CONGRUENT TRIANGLES **Is it possible to prove that the triangles are congruent? If so, state the postulate or theorem you would use.**

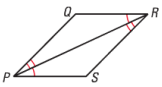
3. $\triangle ABC, \triangle QRS$



4. $\triangle XYZ, \triangle JKL$



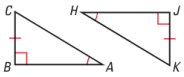
5. $\triangle PQR, \triangle RSP$



7. ★ **MULTIPLE CHOICE** Which postulate or theorem can you use to prove that $\triangle ABC \cong \triangle HJK$?

Ⓐ HL Ⓑ AAS

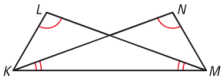
Ⓒ SAS Ⓓ Not enough information



33. **PROOF** Write a proof.

GIVEN ▶ $\angle NKM \cong \angle LMK, \angle L \cong \angle N$

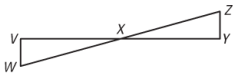
PROVE ▶ $\triangle NMK \cong \triangle LKM$



34. **PROOF** Write a proof.

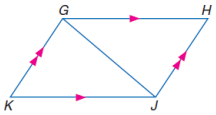
GIVEN ▶ X is the midpoint of $\overline{VY}$ and $\overline{WZ}$.

PROVE ▶ $\triangle VWX \cong \triangle YZX$



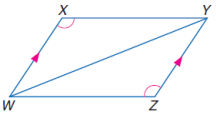
4. **Given:** $\overline{GH} \parallel \overline{KJ}, \overline{GK} \parallel \overline{HJ}$

Prove: $\triangle GJK \cong \triangle JGH$



5. **Given:** $\overline{XW} \parallel \overline{YZ}, \angle X \cong \angle Z$

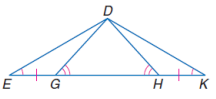
Prove: $\triangle WXY \cong \triangle YZW$



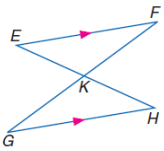
7. **Given:** $\angle E \cong \angle K, \angle DGH \cong \angle DHG$

$\overline{EG} \cong \overline{KH}$

Prove: $\triangle EGD \cong \triangle KHD$



9. **Given:** $\overline{EF} \parallel \overline{GH}, \overline{EF} \cong \overline{GH}$
Prove: $\overline{EK} \cong \overline{KH}$



11. **Given:** $\angle V \cong \angle S, \overline{TV} \cong \overline{QS}$
Prove: $\overline{VR} \cong \overline{SR}$